

Bat Survey Report



**High Desert Corridor Project
Los Angeles and San Bernardino Counties
63-mile Connection Between SR-14 and SR-18
District 7 & 8- LA and SB-New Highway**

EA 26000/EFIS 0712000035

August 2015



Bat Survey Report for the HDC Project

Los Angeles and San Bernardino Counties

63-mile Connection Between

SR-14 and SR-18

District 7 & 8-LA & SB-New Highway

EA 26000/EFIS 0712000035

August 2015

STATE OF CALIFORNIA

Department of Transportation

Prepared By: _____ Date: _____

Andrew Johnstone, Associate Environmental Planner, N/S (Natural Sciences)

Phone Number: (213) 897-0840

Office Name: Environmental Planning

District/Region: District 7

Recommended

for Approval By: _____ Date: _____

Jeff Johnson, Associate Environmental Planner, ,N/S

Phone Number: (213) 897-0404

Office Name: Environmental Planning

District/Region: District 7

Approved By: _____ Date: _____

Paul Caron, Senior District Biologist

Phone Number: (213) 897-0610

Office Name: Environmental Planning

District/Region: District 7

1 Introduction

Caltrans biologists conducted focused acoustic surveys for sensitive bat species within suitable habitat areas for the High Desert Corridor (HDC) Project. The results of the survey are presented in this report.

1.1 Project Description

The proposed project known as the HDC is to construct a new multimodal link between SR-14 in Los Angeles County and SR-18 in San Bernardino County. It would connect some of the fastest growing residential, commercial, and industrial areas in southern California, including the cities of Palmdale, Lancaster, Adelanto, Victorville, and the Town of Apple Valley.

1.2 Study Area

The general biological study area (BSA) for the proposed project is generally 500 feet in width over most of the 63-mile length with few exceptions at interchanges, intersections with on/off ramps, where the rail line and highway separate, and in few areas where the roadway narrows. Refer to Figure 1 for a depiction of the BSA. For the purposes of the bat surveys, the study area was focused on areas along the Mojave River as this area has the potential for bats and is consistent with CNDDDB accounts and visual observation of bats and bat sign. Refer to Figure 2 for the depiction of the general survey area.

2 Methods

2.1 Literature Review

A review of the most current reports from the California Natural Diversity Database (CNDDDB) for the Adelanto, Apple Valley North, Apple Valley South, Baldy Mesa, Hesperia, and Victorville 7.5-minute topographic quadrangles, as well as reconnaissance-level habitat assessments of the Project areas, were conducted. Based on the results from the CNDDDB search and habitat assessments, suitable habitat within the Project vicinity occurs for the following sensitive bat species:

Hoary bat (*Lasiurus blossevillii*) WBWG: M

Townsend's big-eared bat (*Corynorhinus townsendii*) US: CT, CDFW: SSC, BLM: S, USFS: S

Western mastiff bat (*Eumops perotis californicus*) CDFW: SSC, BLM: S

Yuma myotis (*Myotis yumanensis*) BLM: S, WBWG: LM

2.2 Field Survey

Caltrans biologists Jeff Johnson and Andrew Johnstone assessed the project site for suitable roosting habitat for the above sensitive bat species. Based on the initial suitable habitat survey, it was determined that areas near the Mojave River had the potential for bat presence due to the topography consisting of rock outcroppings and crevices for roosting as well as an abundance of food items. This rationale was also consistent with the records from CNDDDB with bat occurrences. Acoustic survey stations were installed at key locations within and adjacent to the Mojave River. Each acoustic survey took place from twilight to approximately 12:00 am.

Equipment included a Pettersson D240x ultrasound detector (D240x) connected to a Samsung Zoom H2 recorder on a wooden pole. The D240x recorded ultrasound signals, including bat calls, and the Zoom H2 recorder recorded these signals as .wave files. Biologists monitored the equipment during use and identified wildlife species observed during the survey period, when possible. The biologists recorded the following site conditions at the beginning of each survey event: temperature, wind speed, cloud cover, and precipitation.

Surveys within the project area were conducted on the evenings of July 21 and July 28, by Caltrans biologists Jeff Johnson and Andrew Johnstone. Two acoustic survey stations were installed in locations with the highest likelihood of detection for bats within the project area.

Survey Station #1 was placed in a sandbar within the flyway of the Mojave River and within the footprint of the proposed viaduct for this project (UTM 11S 470914 E, 3825391 N). The stations placement can be viewed in Figure 3 and a photograph of the station is depicted in Figure 4.

Survey Station #2 was placed in an upland area approximately 100 feet west of the Mojave River and approximately 50 feet in elevation relative to the Mojave River (UTM 11S 470865 E, 3825415 N). The stations exact placement can be viewed in Figure 3 and a photograph of the station is depicted in Figure 5.

2.3 Data Analysis

Sonobat 3.1.1 software was utilized to process each individual bat call or call sequence to species level. Species classifications were based on a quality acceptance threshold of 0.80 and a discriminant probability/decision threshold of 0.90 for acceptance. After all files were processed, a biologist reviewed the data for quality and to identify any questionable classifications by the software.

3 Results

3.1 Survey Conditions

Survey conditions are presented in Table 1.

Table 1: Survey Conditions

Date	Location	Time	Temperature (degrees Fahrenheit)	Wind (miles per hour)	Cloud Cover (Percent)	Precipitation (inches)
7/21/2015	Station 1 Mojave River	7:30 PM	76	2	0	0
7/28/2015	Station 1 Mojave River	7:40 PM	80	5	0	0
7/21/2015	Station 2 Rock Outcropping	7:45 PM	76	5	0	0
7/28/2015	Station 2 Rock Outcropping	7:55 PM	81	5	0	0

3.2 Roosting Habitat Requirements

The four sensitive bat species that were targeted for the bat surveys have specific roosting habitat requirements and are explained below.

Hoary bat generally roosts in dense foliage of medium to large trees. Preferred sites are hidden from above, with few branches below, and have ground cover of low reflectivity (Harris 1999a)

Townsend's big-eared bat roost within caves, mines, tunnels, buildings, or other various anthropogenic structures, however, they do not tuck themselves into cracks and crevices like many bat species do but prefer open roosting areas in large rooms (Pierson and Rainey 1998).

Western mastiff bat roost in crevices in rocks, high buildings, tunnels, and tress. This species needs vertical faces to drop off to take flight (Ahlborn 1990).

Yuma myotis roosts in buildings, mines, caves or crevices. The species has also been seen roosting in abandoned swallow nests and under bridges (Harris 1999b).

The rock outcroppings within the vicinity of the survey stations provide cracks, overhangs, and crevices that may provide roosting habitat for the four sensitive bat species listed above. Guano was observed in multiple locations at the base of crevices near Survey Station #2 and roosts were observed. In addition to observed roosting habitat, this area as a whole also provides suitable foraging habitat. The landscape of the Mojave River in this area provides ample water for insect species and thus food items for bat species.

3.3 Bat Species Detected

Bat species that were detected from the acoustic surveys are presented in Table 2.

Table 2: Bat Species Detected

Common Name	Scientific Name	Special Status
california myotis	<i>Myotis californicus</i>	none
canyon bat	<i>Parastrellus hesperus</i>	none
Mexican freetail	<i>Tadarida brasiliensis</i>	none
silver haired bat	<i>Lasionycteris noctivagans</i>	none
western small-footed bat	<i>Myotis ciliolabrum</i>	none
Yuma myotis	<i>Myotis yumnensis</i>	BLM-S; WBWG-LM

Designations: BLM-S: Bureau of Land Management - Sensitive

WBWG-LM: Western Bat Working Group – Low/Medium Priority

3.4 Conclusions

Of all the echolocation calls captured during the acoustic surveys, approximately 75% of them were from common canyon bats (*Parastrellus hesperus*). During the twilight hour of both surveys, bats were observed emerging from rock crevices within the survey area, although species was not determined due to low light conditions.

One sensitive species, Yuma myotis, designated as “sensitive” by BLM and “Low-Medium priority” by WBMG was detected. Roosting habitat for this species exists within the survey area due to the rock outcroppings and crevices that this species is known to roost in.

It is expected that the common species that were detected in addition to Yuma myotis are roosting within the project site due to visual confirmation of guano within rock crevices.

The other sensitive species that were targeted for this survey, including hoary bat, Townsend’s big-eared bat, and western mastiff bat, were not detected. No impact to these species is expected to occur.

4 Discussion

Common bat species in addition to Yuma myotis were detected during the acoustic surveys and it is likely these species are roosting within the project area and these roost sites will be temporarily or permanently affected by the implementation of the proposed project. Depending on the design of the bridge that is proposed to occur in this area, there is the potential for creating bat habitat. It is unlikely however that this will be a change in kind as certain bat species prefer bridges over rock crevices.

With regards to the other targeted species, including hoary bat, Townsend's big-eared bat, and western mastiff bat, no impacts to these species are expected to occur. However, because this area provides both suitable foraging and roosting habitat for these species, they have the potential to inhabit this area in the future. Therefore, it is recommended that surveys should be conducted prior to construction to determine presence.

5 References

Ahlborn, G.

1990 Western Mastiff Bat. M. White, editor. California's Wildlife, California Department of Fish and Game, Sacramento, CA. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=2357> accessed August 15th, 2015.

Harris, J.

1999a Hoary Bat. D. Alley, R. Duke, editors. California's Wildlife, California Department of Fish and Game, Sacramento, CA. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=2341> accessed August 15th, 2015.

1999b Yuma Myotis. D. Alley, R. Duke, editors. California's Wildlife, California Department of Fish and Game, Sacramento, CA. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=2319> accessed August 15th, 2015.

Pierson, E.D., and W.E. Rainey

1998 Distribution, Status, and Management of Townsend's Big-eared Bat (*Corynorhinus townsendii*) in California. Submitted November 1994 to the California Department of Fish and Game Wildlife Management Division, Bird and Mammal Conservation Program. Final Report for Contract No. FG7129, May 1998.
http://dfg.ca.gov/wildlife/nongame/publications/bm_research/docs/96_07.pdf accessed August 15th, 2015.

6. Figures

Biological Study Area



Figure 1: Biological Study Area



U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY



VICTORVILLE QUADRANGLE
CALIFORNIA-SAN BERNARDINO CO.
7.5-MINUTE SERIES

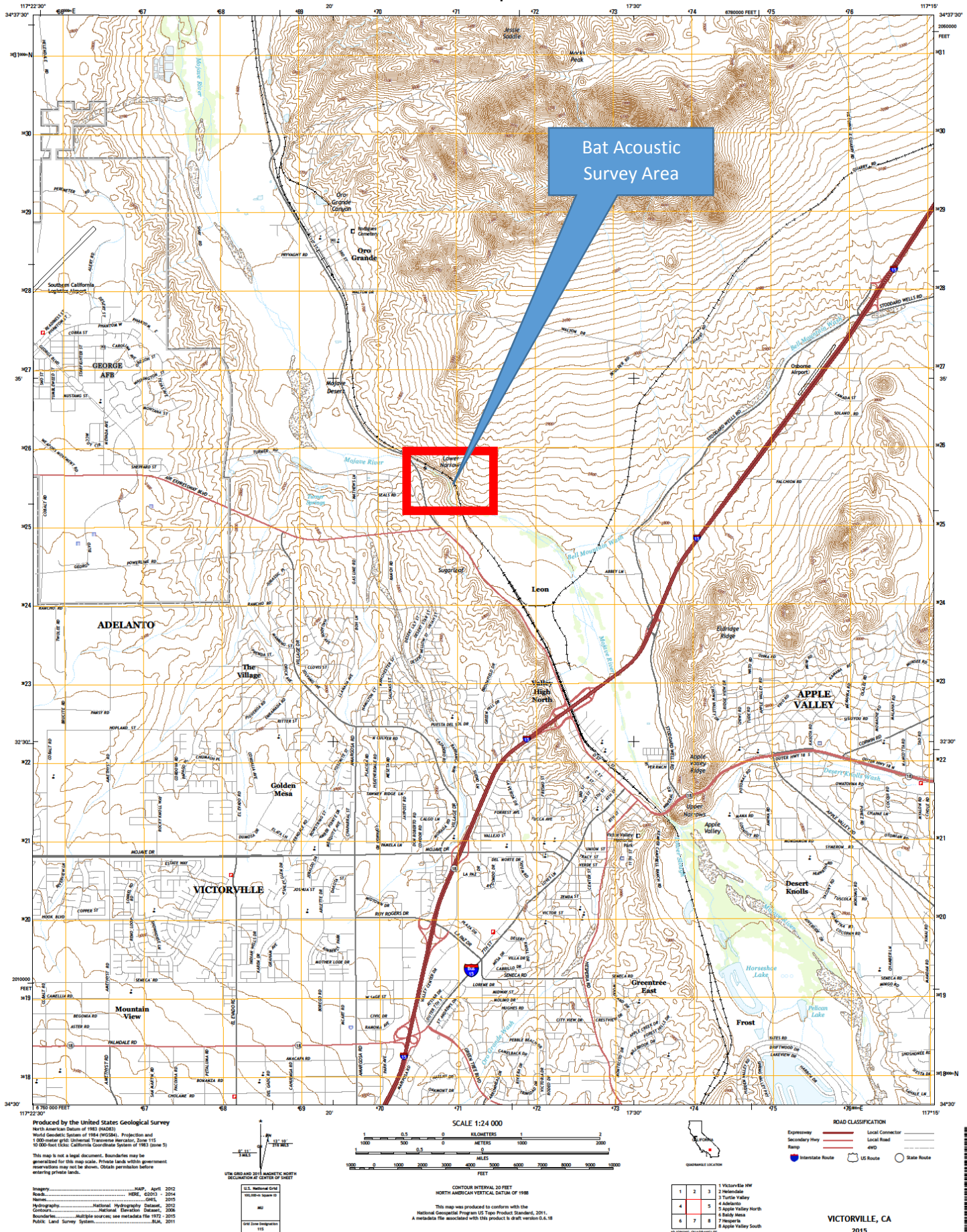


Figure 2: General Survey Location



Figure 3: Survey Station Locations



Figure 4: Survey Station #1 Mojave River (Photo Looking North)



Figure 5: Survey Station #2 Rock Outcropping (Photo Looking East)